Spring 2-1-2018

GPHY 421.01: Sustainable Cities

David D. Shively
University of Montana - Missoula, david.shively@umontana.edu

Course Syllabus - GPHY 421 Sustainable Cities
Spring 2018

Class Meets:

TR3:30 – 4:50 PM, STON 304

Instructor information:

Instructor: Dave Shively, Professor
Department of Geography, UM
Office: Stone 212
Email: david.shively@umontana.edu
Phone: 406-243-6478
Office Hours: T 12-2 PM; R 10-11 AM, 1-2 PM; and by Appt.

Course description:

Catalog:

GPHY 421 - Sustainable Cities. 3 Credits. Offered spring even-numbered years. Prereq., upper-division or graduate standing. Same as CCS 421. A discussion of sustainability efforts in cities around the world. Topics include, for example, urban sprawl and smart growth, alternative energy, public transportation, integrated waste management, integrated water management, green architecture, and urban agriculture.

Additional Description:

Today, more than 50% of the world's population lives in urban environments and this is will increase considerably through the current century. This urbanization presents a myriad of challenges for the states (i.e., countries) and regions these places are embedded in, and for Earth as a whole: environmental (pollution and GHG production), social (equity), and economic (structural, production, development). The current century is seen by many mainstream scientists as representing a tipping point for the achievement of a sustainable human future on Earth, and urban places will play a key role in this. We will examine "urban sustainability" in relation to these challenges and their potential solutions so that you can develop a theoretically informed and practical framework for the assessment of problems and solutions for urban environments. We'll consider concepts, theory, and approaches coming from the fields of Geography, Planning (urban and spatial), Biology (ecology, conservation biology), Economics, and interdisciplinary approaches such as political ecology and "resilience."

Learning Outcomes:

Upon successful completion of the course, you should be able to:

1. Define, describe, and deconstruct "sustainability" and "urban sustainability."
2. Describe how urban sustainability challenges vary with development.
3. Describe how the green cities movement supports and doesn't support climate action.
4. Identify opportunities and challenges for improving urban sustainability across the 3 Es.
5. Describe urban sustainability in the context of:
    a. urban ecological systems;
    b. larger-scale ecological systems;
    c. sustainability metrics and indicators.
6. Develop frameworks for assessing urban sustainability for application in real world settings.

Required textbook and supplementary materials:

- Selected readings are provided via the course Moodle page, and are indicated in the Provisional Course Schedule and the References/Resources listed below.
- Be sure to read assigned material prior to the class to which it pertains.
- Additional items may be recommended as supplementary, or assigned as appropriate, during the semester.
- As you read assigned works, make notes or annotations so that you can refer to these later during discussion or otherwise.

Course Requirements

Quizzes

Quizzes will be scheduled for those class days for which readings were assigned, and any quiz will query that assigned material with a random question or two. The expectation is that the quiz will require 5-10 minutes for response. It is understood that you may miss class owing to circumstances either within or not in your control – a certain number of quizzes will not be counted to allow for such events.

Quizzes will be graded as follows: 5 pts – detailed and accurate; 4 pts quite detailed and accurate; 3 pts – somewhat detailed/accurate; 2 pts – not very detailed/accurate; 1 pt – you wrote something; 0 points – not received.

Sustainability Assessment

You will develop and apply a comprehensive and rigorous sustainability assessment framework to an urban place that will serve as a sustainability case study for which you will develop a report and presentation by semester's end. We will consider several different metrics, indicators, indices and approaches for such, and you will adapt and recombine from these to form your own framework to assess the sustainability of challenges and solutions across different sectors (environment, economy, equity, livability) in your place. This will be a group project (4-5 persons) that will run through the semester.

Graduate Increment

The UM Graduate Council observes: "The graduate increment is the work required of graduate students to distinguish their learning experience from that of the undergraduates in a course where both participate." As such, graduate students enrolled in this course are required to submit work that is analytically richer than undergraduates might submit, hence the increased length for assigned activities. In order to be sure that your work is "analytically richer," you (the graduate student) must provide and discuss two or more examples, or examinations of such, pertaining to the application of theory and its concepts and principles in each of the theoretical forays and in the finished research paper.

Activity	Percentage
Quizzes	20
Sustainability Assessment Case Study	
Framework	10
Report	30
Presentation	10
Midterm	15
Final	15
Total	**100**

*Undergraduates and graduates will be evaluated separately. See Graduate Increment above in this section.

Formatting Guidelines for Written Work

You should utilize the current style conventions depicted in the *Annals of the American Association of Geographers* for the formatting of your paper and other submitted items, and incorporate elements of the Turabian or Chicago Style for its presentation (title page, table of contents, headings/subheadings). Use current examples from the Annals as a guide to the preparation of your citations, reference lists, figure and table captioning, etc. For readability's sake, be sure that you format the text of your work as double-spaced typewritten pages, with one inch margins and 12 pt. font (this does not include title page, references, tables, and figures - these last three items should be appropriately captioned/labeled and attached at rear of submitted works). Your written work will be evaluated following the assessment rubric shown below (the weighting of criteria may be modified as the semester progresses).

Assessment Report Guidelines:

Specific guidelines will be provided separately, but you must follow the formatting guidelines above and in the Annals of the AAG, and writing guidelines as specified in the Turabian Guide, for the preparation of your paper, citations (wherever used), and general guidance.
Organization/Sections/Headings: These should correspond to those appropriate to your framework and case study.

Guidelines for Report Presentations

Your group will provide a brief (15 minute) professional presentation on your case study at the end of the semester. You will need to develop a PowerPoint presentation that reviews the main elements of your research paper, and provides visual and spatial information relevant to the case study (guidelines/directions will be provided). You should practice your presentation, use professionally appropriate language, and be presentable (business casual attire). Your presentation will be graded following an evaluation instrument that will also be provided).

Provisional Course Schedule*:

Week/Day	Topic	Readings	Activities
1 (1/23 & 1/25)	**T:** Intro to Course **R:** Sustainability & Planning	**T:** NA **R:** Randolph Ch. 3	**T: NA** **R: Quiz, Lecture, Discussion**
2 (1/30 & 2/1)	**T:** Some Urban Geography: Urbanization, Urban Structures, Urban Systems **R:** Why Sustainable Cities?	**T:** Fellman et al. Ch. 11 **R:** Portney Ch. 1	**T: Quiz, Lecture, Discussion** **R: Quiz, Lecture, Discussion**
3 (2/6 & 2/8)	**T:** Scaling Urban Environmental Challenges **R:** Urban Ecology – Concepts (Pop, Energy, Matter)	**T:** McGranahan **R:** Gaston et al.	**T: Quiz, Lecture, Discussion** **R: Quiz, Lecture, Discussion**
4 (2/13 & 2/15)	**T:** Ecology – Concepts (Biodiversity & Conservation) **R:** Economic Development & Sustainability	**T:** Warren et al. **R:** Portney Ch. 4; Supplemental – Amazon HQ2 Competition Reading	**T: Quiz, Lecture, Discussion** **R: Quiz, Lecture, Discussion**
5 (2/20 & 2/22)	**T:** Social Equity **R:** Measuring Sustainability I	**T: 1)** Portney Ch. 6; **2)** PWA Delivering Community Benefits **R:** Portney Ch. 2, pp.37-71	**T: Quiz, Lecture, Discussion** **R: Quiz, Lecture, Discussion**
6 (2/27 & 3/1)	**T:** Measuring Sustainability II **R:** Work Day	**T:** Portney Ch. 2, pp.71-87; gci_report_en **R:** NA	**T: Quiz, Lecture, Discussion** **R: Work on Framework & Midterm Questions**
7 (3/6 & 3/8)	**T:** Work Day (**Shively at Montana Water Summit**) **R: Midterm – Super Family Feud/Jeopardy Midterm Format**	**T:** NA **R:** NA	**T: Work on Framework & Midterm Questions** **R: NA**
8 (3/13 & 3/15)	**T:** Urban Design – Smart Growth, New Urbanism, LEED, BREEM **R:** Local Governments and Climate Action I	**T: TBA** **R:** Johnson et al.	**T: Quiz, Lecture, Discussion** **R: NA**
9 (3/20 & 3/22)	**T:** Local Governments and Climate Action II **R:** Local Governments and Climate Action III; GUEST SPEAKER Chase Jones	**T:** Gordon and Acuto **R: 1)** Creutzig et al.; **2)** Exec Summary Missoula Climate Action Plan	**T: Quiz, Lecture, Discussion** **R: Quiz, Lecture, Discussion**
Spring Break (3/27 & 3/29)			
10 (4/3 & 4/5)	**T:** GCI – N. America (Compare w/ Portney) **R:** GCI - Europe	**T:** gci_report_northamerica_en **R:** gci_report_europe_en	**T: Quiz, Lecture, Discussion** **R: Quiz, Lecture, Discussion**
11 (4/10 & 4/12)	**T:** GCI – Latin American **R:** GCI - Asia	**T:** gci_report_latam_en **R:** gci_report_asia_en	**T: Quiz, Lecture, Discussion** **R: Quiz, Lecture, Discussion**
12 (4/17 & 4/19)	**T: CFKRBC Annual Meeting** **R:** GCI - Africa	**T:** NA **R:** gci_report_africa_en	**T: Attend Meeting** **R: Quiz, Lecture, Discussion**
13 (4/24 & 4/26)	**T:** Presentations **R:** Presentations	**T:** NA **R:** NA	**T:** **R:**
14 (5/1 & 5/3)	**T:** Presentations **R:** Wrap-Up	**T:** NA **R:** NA	**T:** **R:**
FINAL EXAM	**Either 1:10-3:10 PM on Wed 5/9, or 1:10-3:10 on Thurs 5/10**		

*Provisional nature of course schedule indicates that though every attempt will be made to adhere to this schedule, it is not written in stone. Any impact of deviations from the schedule on course activities will be considered and adjusted for.

Course guidelines and policies:

Late Work

Late work will lose one-half a letter grade (i.e., A to A-) for each day late including weekends. Work is due at the start of class on day specified. Please do not make excuses for late work – I will need advance notification of any factors that will affect your ability to turn in work on time and/or to meet other course requirements. Save, back-up, and be prepared to submit digital (i.e., on disk) copies of any work produced during the semester in case of technology failures.

Academic Misconduct

All students at the University of Montana must practice academic honesty at all times. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://www.umt.edu/vpsa/policies/student_conduct.php

Disability modifications

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or call 406.243.2243. I will work with you and Disability Services to provide an appropriate modification.

Recording in Class

Montana law requires that if you wish to record a lecture, you must first inform me and I must consent before you do so.

Grading policy

Though I will examine the distribution of course scores (totals) to ensure that it is an appropriate and fair one, I do not practice grading that contributes to "grade-inflation." The best individual strategy to ensure that you receive a grade you can live with is to work to meet and/or exceed course requirements. Remember, A's are rewards for Superior Performance, B's for Above Average Performance, and C's for Average Performance. Course grades will be based upon the following percentages of the total points possible for the course as weighted by the criteria specified in course requirements.

A <93.0% A- = 90.0-92.9%
B+ = 87.0-89.9% B = 83.0-86.9% B- = 80.0-82.9%
C+ = 77.0-79.9% C = 73.0-76.9% C- = 70.0-72.9%
D+ = 67.0-69.9% D = 63.0-66.9% D- = 60.0-62.9% F < 59.9%

References/Resources

Portney, K.E. (2013): Taking Sustainable Cities Seriously. Economic Development, the Environment, and Quality of Life in American Cities. – MIT Press, Cambridge, 380 pages. [Selected chapters available via Moodle]

Siemens AG (2012): The Green City Index. A summary of the Green City Index research series. Siemens AG, 47 pages. [Available via Moodle]

Siemens AG (2009): European Green City Index. Assessing the Environmental Impact of Europe's Major Cities. Siemens AG, 99 pages. [Available via Moodle]

Siemens AG (2010): Latin America Green City Index. Assessing the Environmental Performance of Latin America's Major Cities. Siemens AG, 99 pages. [Available via Moodle]

Siemens AG (2011): African Green City Index. Assessing the Environmental Performance of Africa's Major Cities. Siemens AG, 91 pages. [Available via Moodle]

Siemens AG (2011): Asian Green City Index. Assessing the Environmental Performance of Asia's Major Cities. Siemens AG, 123 pages. [Available via Moodle]

Siemens AG (2011): US and Canada Green City Index. Assessing the Environmental Performance of 27 Major US and Canadian Cities. Siemens AG, 139 pages. [Available via Moodle]